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THE NATH LAW GROUP
112 South West Street
Alexandria, VA 22314

EXAMINER	
RUIZ, ANGELICA	
ART UNIT	PAPER NUMBER
2158	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,482	PATTERSON ET AL.	
	Examiner	Art Unit	
	ANGELICA RUIZ	2158	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Action is responsive to Applicant's amendment, filed on February 19, 2009.

2. Claims 1-12 and 14-18 are pending.

Continued Examination Under 37 CFR 1.114

3. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on February 19, 2009. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/2008 has been entered.

Response to Arguments

4. Applicant's arguments with respect to claims 1-12 and 14-18 have been considered but are moot in view of the new grounds of rejection necessitated by Applicant's amendment of the claims.

Claim Objections

5. Claims 1 and 18 are objected due to being Duplicated Claims.
Applicant is advised that should claim [1] be found allowable, claims [18] will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else **are so close in content that they both**

cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

6. Claim 4 is objected as being improperly marked as “Previously presented” and including an amendment. Proper correction is required.

7. In view of canceled claim 13, the Examiner withdraws the pending duplicate claims objection.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-12 and 15-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. .

10. Claim 1 recites a "method" which is not tied to another statutory class (such as a particular apparatus) or transform underlying subject matter (such as an article or materials) to a different state or thing. For the reason above, claims 1-12 and 15-17 are believed to be non-statutory subject matter. Appropriate correction is required.

Guidelines when evaluating whether a claimed invention falls within a statutory category of invention. (See MPEP 5 2106.1V.B: Determine Whether the Claimed Invention Falls Within An Enumerated Statutory Category.). The latter three categories define "things" or "products," while a "process" consists of a series of steps or acts to be performed. For purposes of USC 101, a "process" has been given a specialized, limited meaning by the courts. Based on Supreme Court precedent1 and recent Federal Circuit

decisions (In re Bilski), the Office's guidance to examiners is that a USC 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under USC 101 and should be rejected as being directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1- 4 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (US 2002/0042793 A1), in view of Deerwester et al (US 4839853).

As per Claim 1, Choi discloses:

A method of determining cluster attractors for a plurality of documents, each document comprising at least one term, each term comprising one or more words, the method comprising: (Par [0106] and Par [0126] and Par [0132]-[0134]), shows the cluster having one or more documents grouped, the "centroid linkage" being the "cluster attractor" as claimed.

calculating, in respect of each term, a probability distribution (Par [0028-[0029], shows the calculating entropy and probability distribution.

and indicative of the frequency of occurrence of one other term in the instance where a document comprises said term and said one other term, and in the instance where a document comprises said term and more than one other term, the respective frequency of occurrence of each other term

(Par [0060], shows the “similar contents belonging to the same cluster have a high probability of relevance” they being from the “document clustering”

that co-occurs with said term in at least one of said documents; calculating, in respect of each term, the entropy of the respective probability distribution;

(Abstract) ***and selecting at least one of said probability distributions as a cluster attractor depending on the respective entropy value*** (Par [0051]-[0053]), calculating the entropy and “probability distribution" as claimed.

However Choi does not specifically discloses:

and indicative of the frequency of occurrence of one other term in the instance where a document comprises said term and said one other term, and in the instance where a document comprises said term and more than one other term

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “Table 2 depicts the "term-by-document" matrix for the 9 technical document titles. Each cell entry, (i,j), is the frequency of occurrence of term i in document j…”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use frequency of co occurrence. The modification would have been obvious

because one of the ordinary skill in the art would implement the mentioned teachings to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 2, the rejection of Claim 1 is incorporated and further Choi discloses:

- wherein each probability distribution comprises, (Par [0051]-[0053]), ***in respect of each co-occurring term, an indicator that is indicative of the total number of instances of the respective co-occurring term in all of the documents in which the respective co- occurring term co-occurs with the term in respect of which the probability distribution is calculated.***

However Choi does not disclose the “co-occurring term, and indicator…with the term"

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…”) and (Col. 6, lines 57-68 and Col. 7, lines 1-42) and (Col. 10, Table 6, shows a numerical indication of the respective “co-occurrences” as claimed.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use frequency of co occurrence. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to

utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 3, the rejection of Claim 1 is incorporated and further Choi discloses: ***- wherein each probability distribution comprises*** (Par [0051]-[0053])***, in respect of each co-occurring term, an indicator comprising a conditional probability of the occurrence of the respective co-occurring term in a document given the appearance in said document of the term in respect of which the probability distribution is calculated.***

However Choi does not disclose the “co-occurring term, and indicator…with the term"

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…”) and (Col. 6, lines 57-68 and Col. 7, lines 1-42) (Col. 10, Table 6, shows a numerical indication of the respective “co-occurrences” as claimed and this with respective of the co-occurring term.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use frequency of co occurrence. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 4, the rejection of Claim 2 is incorporated and further Choi discloses:

- wherein each indicator is normalized with respect to the total number of terms in the document, or each document in which the term in respect of which the probability distribution is calculated appears.

However Choi does not disclose the “indicator"

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…”) and (Col. 6, lines 57-68 and Col. 7, lines 1-42) (Col. 10, Table 6, shows a numerical indication of the respective “co-occurrences” as claimed.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use an indicator. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to utilize the relevance between documents contents to provide the most relevant clustering of document sets and use an indicator to provide the actual number of terms.

As per Claim 15, the rejection of Claim 1 is incorporated and further Choi discloses:

A method of clustering a plurality of documents, each document comprising at least one term, each term comprising one or more words, the method comprising

determining cluster attractors in accordance with the method of Claim 1; comparing each document with each cluster attractor; and assigning each document to one or more cluster attractors depending on the similarity between the document and the cluster attractors.

(Abstract, "A method of order-ranking document clusters using entropy data and Bayesian self-organizing feature maps (SOM) is provided in which an accuracy of information retrieval is improved by adopting Bayesian SOM for performing a real-time document clustering for relevant documents in accordance with a degree of semantic similarity between entropy data extracted using entropy value and user profiles and query words given by a user…") and (Par [0183] When Bayesian prior distribution is used, learning time, i.e., the time period taken for clustering, can be reduced by utilizing weights that include a large volume of actual data. Such a method results in further correct clustering as compared with the clustering performed by Kohonen network where a simple random value is used as an initial weight.").

As per Claim 16, the rejection of Claim 11 is incorporated and further Choi discloses: ***comprising: calculating, in respect of each document, a probability distribution indicative of the frequency of occurrence of each term in the document***; (Par [0029])***comparing the respective probability distribution of each document with each probability distribution selected as a cluster attractor;*** (Par [0106] and Par [0126] and Par [0132]-[0134]), shows the cluster having one or more documents grouped, the "centroid linkage" being the "cluster attractor" as claimed.

and assigning each document to at least one cluster depending on the similarity between the compared probability distributions. (Abstract)

However Choi does not disclose the “frequency of occurrence "

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…”) and (Col. 6, lines 57-68 and Col. 7, lines 1-42) (Col. 10, Table 6, shows a numerical indication of the respective “co-occurrences” as claimed and this with respective of the co-occurring term.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use frequency of co occurrence. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 17, the rejection of Claim 16 is incorporated and further Choi discloses:

- comprising organizing the documents within each cluster by: (Title)

assigning a respective weight to each document, the value of the weight depending on the similarity between the probability distribution of the document and the probability distribution of the cluster attractor; (Par [0012] and Par [0051])

comparing the respective probability distribution of each document in the cluster

with the probability distribution of each other document in the cluster; (Par [0182]-[0183]), ***assigning a respective weight to each pair of compared documents,*** (Par [0123]***) the value of the weight depending on the similarity between the compared respective probability distributions of each document of the pair; calculating a minimum spanning tree for the cluster based on the respective calculated weights.*** (Par [0098], "As another document clustering method, there is an STC(suffix tree clustering)…")

As per Claim 18, Choi discloses:

A computer-implemented method of clustering a plurality of documents, each document comprising at least one term, each term comprising one or more words, the method including: (Par [0106] and Par [0126] and Par [0132]-[0134]), shows the cluster having one or more documents grouped.

causing a computer to calculate, in respect of each term, a probability distribution (Par [0028-[0029], shows the calculating entropy and probability distribution.

indicative of the frequency of occurrence of one other term in the instance where a document comprises said term and said one other term, and in the instance where a document comprises said term and more than one other term, the respective frequency of occurrence of each other term (Par [0060], shows the "similar contents belonging to the same cluster have a high probability of relevance" they being from the "document clustering"

that co-occurs with said term in at least one of said documents; causing the computer to calculate, in respect of each term, the entropy of the respective probability distribution; (Abstract) ***causing the computer to select at least one of said probability distributions as a cluster attractor depending on the respective entropy value.***

(Par [0051]-[0053]), calculating the entropy and “probability distribution" as claimed.

However Choi does not specifically discloses:

and indicative of the frequency of occurrence of one other term in the instance where a document comprises said term and said one other term, and in the instance where a document comprises said term and more than one other term

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, “Table 2 depicts the "term-by-document" matrix for the 9 technical document titles. Each cell entry, (i,j), is the frequency of occurrence of term i in document j…”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use frequency of co occurrence. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

13. Claims 5-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi (US 2002/0042793 A1), in view of Deerwester et al (US 4839853), and further in view of Wong et al (US 6128613).

As per Claim 5, the rejection of Claim 1 is incorporated and further Choi discloses: ***comprising assigning each term to one of a plurality of subsets of terms depending on the frequency of occurrence of the term; and selecting, as a cluster attractor, the respective probability distribution of one or more terms from each subset of terms.***

(Par [0059], "…document cluster utilizing an index word presented in the document or a mechanically extracted keyword, as an identifier element for the document content. Thus-formed document cluster has a cluster profile representing the clusters…").

However Choi does not disclose the "frequency of occurrence"

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, "…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…") and (Col. 6, lines 57-68 and Col. 7, lines 1-42) (Col. 10, Table 6, shows a numerical indication of the respective "co-occurrences" as claimed.

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms. The modification would have been obvious because one of the ordinary skills in the art would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 6, the rejection of Claim 5 is incorporated and further Choi discloses: ***wherein each term is assigned to a subset depending on the number documents of the corpus in which the respective term appears.***

However neither Choi nor Deerwester disclose that the each term is assigned to a subset

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use each term assigned to subsets. The modification would have been obvious because one of the ordinary skills in the art would implement the

mentioned teaching to utilizing the relevance between documents contents to provide the most relevant clustering of documents.

As per Claim 7, the rejection of Claim 5 is incorporated and further Choi discloses:

- wherein an entropy threshold is assigned to each subset, the method comprising selecting, as a cluster attractor, the respective probability distribution of one or more terms from each subset having an entropy that satisfies the respective entropy threshold.

(Par [0105], "In the present invention, characteristics of groups for clustering can be expressed in the number of relevant documents that a specific group includes to match the information request from the user. That is, document clustering performed in a system where document ranking is obtained by computing entropy value between keyword of each document and query word…")

However neither Choi nor Deerwester disclose that the entropy satisfies "the respective entropy threshold"

On the other hand Wong discloses the above claimed feature as follow:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…") And (Col.6, lines 64-67 and Col. 7, lines "…To trim the connection further, an embodiment of the present invention uses a satiable threshold…").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the

teachings of Choi to provide an entropy threshold. The modification would have been obvious because one of the ordinary skill in the art would implement the mentioned teachings to perform calculations between relevant ranges and provide the user the best probable result.

As per Claim 8, the rejection of Claim 7 is incorporated and further Choi discloses:

- comprising selecting, as a cluster attractor, the respective probability distribution of one or more terms from each subset having an entropy that is less than or equal to the respective entropy threshold.

(Par [0059], "…document cluster utilizing an index word presented in the document or a mechanically extracted keyword, as an identifier element for the document content. Thus-formed document cluster has a cluster profile representing the clusters…").

However Choi does not disclose the "frequency of occurrence"

On the other hand Deerwester discloses the above claimed features as follows:

(Col. 3, lines 34-65 and Col. 4 lines 1-9, "…Terms are shown as circles and labeled by number. Document titles are represented by squares with the numbers of constituent terms indicated parenthetically…") and (Col. 6, lines 57-68 and Col. 7, lines 1-42) (Col. 10, Table 6, shows a numerical indication of the respective "co-occurrences" as claimed.

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms.

The modification would have been obvious because one of the ordinary skills in the art would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 9, the rejection of Claim 5 is incorporated and further Choi discloses:

wherein each subset is associated with a frequency range and wherein the frequency ranges for respective subsets are disjoint.

(Par [0145]-[0146]) and (Par [0051]), recites the "Frequency" as claimed and further below recites that there is disjoint clustering.

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms.

The modification would have been obvious because one of the ordinary skills in the art

would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 10, the rejection of Claim 5 is incorporated and further Choi discloses:

- wherein each subset is associated with a frequency range, the size of each successive frequency range being equal to a constant multiplied by the size of the preceding frequency range in order of increasing frequency.

(Par [0120], "As another measure for similarity, Sij=1/(1+dij) or Sij=constant-dij, can be considered from the distance dij which is a measure for dissimilarity between the two documents Xi and Xj. In general, Sij has the value between 0 and 1, and as Sij becomes closer to 1, similarity between the two documents becomes higher."), there is a constant being multiplied.

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms.

The modification would have been obvious because one of the ordinary skills in the art would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 11, the rejection of Claim 7 is incorporated and further Choi discloses:

wherein the respective entropy threshold increases for successive subsets in order of increasing frequency.

(Par [0170], "When the winner for each input is determined, the weight vector moves toward the input vector by the updated value of the weight vector. Such a movement has a non-uniform range of variation at an early stage, however, it is gradually stabilized to converge into a uniform weight vector value.")

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms.

The modification would have been obvious because one of the ordinary skills in the art would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claim 12, the rejection of Claim 11 is incorporated and further Choi discloses:

- wherein the respective entropy threshold for successive subsets increases linearly.

(Par [0005], "…using entropy…then increased up to a predetermined number(50, for example) using a bootstrap algorithm so as to seek document clustering with an accuracy, a degree of similarity for thus-generated cluster is obtained by using Kohonen…").

However neither Choi nor Deerwester disclose "plurality of subset of terms"

On the other hand Wong discloses the above claimed feature as follows:

(Abstract and Claim 17, "…extracting a subset of the words as nonrepeating document keywords; grouping the document keywords into ordered groups…")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester and Wong into the teachings of Choi to use frequency of co occurrence and a plurality of subset terms. The modification would have been obvious because one of the ordinary skills in the art would implement the mentioned teaching to utilize the relevance between documents contents to provide the most relevant clustering of document sets.

As per Claims 14, being the **apparatus claim** corresponding to the method 1, respectively and rejected under the same reason set forth in connection of the rejections of Claim 1, and further Wong discloses: (Abstract and Col. 5, lines 22-30, "computer memory that directs a computer processor to perform computations….").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention was made to incorporate the teachings of Deerwester into the teachings of Choi to use an apparatus to perform the mentioned method. The modification would

have been obvious because one of the ordinary skill in the art would implement the mentioned computer usage to provide the hardware necessary to perform the method of claim 1.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELICA RUIZ whose telephone number is (571)270-3158. The examiner can normally be reached on 8:00 a.m. to 4:30 p.m., ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ali can be reached on (571) 272-4105. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Angelica Ruiz
Examiner
Art Unit 2158

/Mohammad Ali/
Supervisory Patent Examiner, Art Unit 2158